CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

TENTATIVE ORDER
ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS

UNION PACIFIC RAILROAD COMPANY

for the property located at:

FORMER SOUTHERN PACIFIC RAIL SPUR
RAVENSWOOD INDUSTRIAL AREA
EAST PALO ALTO, SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location:** The former Southern Pacific Transportation Company (now Union Pacific Railroad or UP) rail spur (Spur) is approximately 4,233 feet long and 20 feet wide. It is bounded to the west by single family homes and to the east by the Ravenswood Industrial Area on its southern portion and wetlands on the northern (see Figure 1, Site Location Map). The Spur elevation is approximately 10 feet above mean sea level.

2. **Site History:** The Spur was built in the early 1900's and served to connect the Ravenswood Industrial Area (RIA) to the main line which crosses the Bay at the Dumbarton Bridge. The Spur serviced several businesses in the RIA, including the former Chipman Chemical facility. The land to the west of the spur was used for farming until about 1950, when it was subdivided and developed into the current residential use. The Spur continued in operation into the 1980's. The tracks were removed in the early 1990s. Since the Spur was abandoned and tracks removed, several of the homeowners have moved their fences to incorporate the former Spur into their backyards. The remainder of the Spur remains vacant and is often used for illegal dumping of garbage.

   In 1996, USEPA along with the Board conducted an area-wide screening level soil and groundwater investigation of the RIA, including the Spur as part of a USEPA, Regional Brownfield Pilot Project. The purpose of this investigation was to determine, in a very general sense, the magnitude of environmental impacts to the RIA from its past industrial uses. This program included collection of soil samples from several locations along the Spur. Analytical results indicated elevated levels of arsenic at some locations along the Spur, warranting further investigation.

3. **Property Ownership:** The property rights and history are as follows:

a. **Easement:** Southern Pacific (SP) was granted an easement from the land owner(s) for the Spur in the early 1900s. SP operated the Spur until sometime in the 1980's. In November 1991, UP quit-claimed its interest in the spur to the City of East Palo Alto (City). During this time period, the tracks were removed. The City disputes the validity of the quit-claim which granted the easement to it.

b. **Property Ownership:** When the Spur easement was granted, the land it occupied was likely a portion of the farmland located to the west. When the farmland was sub-divided and developed into homes in the early 1950s, new parcels were established, which included the Spur as a portion of the individual lots, recognizing the existing rail easement. This being the case, each of the residential home owners owned the land upon which the Spur rests, but continued to grant the easement to SP/UP. There are about 75 parcels located along the Spur.

4. **Named Dischargers**: Union Pacific Railroad Company is named as a discharger, because it is the successor in interest to Southern Pacific Transportation Company, which operated the Spur during the time of the activities that resulted in the discharge of arsenic. SP/UP had control of the Spur during the time of the discharge and conducted operations on the Spur which allowed for the discharge of arsenic.

The underlying homeowners are not named as dischargers. These homeowners have never had legal possession or control of the Spur, did not have knowledge of the activities that resulted in the discharge, and did not have the legal ability to prevent the discharge. The easement granted to SP/UP allowed for SP/UP's operation of a rail spur over the land. Homeowners were prevented access to the Spur by a fence that separated their backyard from the Spur. Additionally, the homeowner have not contributed to nor exacerbated the discharge.

The City is not named as a discharger. While a quit claim exists which releases UP's interest in the Spur to the City, the City disputes the validity of the quit claim. The City has not taken physical possession of the Spur, nor has it taken any actions that have contributed to or exacerbated the discharge on the Spur.

5. **Remedial Investigation/Soil Pollution:** UP has worked cooperatively with the City, homeowners and Board staff to define the nature and extent of the impacts along the Spur. Concentrations of arsenic in excess of 100 mg/kg were found in surface or near surface soil along the Spur, significantly exceeding health based cleanup goals for arsenic in soil within a residential setting. These investigations have been completed and the extent of pollution on the Spur defined.

6. **Remedial Design:** UP submitted a Remedial Design report, dated November 2004 to the Board setting forth a final remedy for the Spur. This remedy was developed, based on the vision of turning the Spur over to the City, who would eventually turn it over to the

adjacent homeowners and allowing it to be incorporated into backyards. To accomplish this, the remedy calls for the removal of soil which exceeds the remediation cleanup standard for arsenic of 20 mg/kg. The report also contained a drainage plan. Additional discussions of surface grading and drainage were discussed at community meetings. After presenting this remedy to the community and receiving public comments, Board staff approved the Remedial Design report, as well as the conceptual grading and drainage plans discussed. UP needs to determine which will final drainage design will be used for the Spur.

7. **Public Participation:** UP, the City, and the Board have conducted significant public outreach activities. Several fact sheets have been distributed and community meetings held to discuss site status, investigation and cleanup options. Both fact sheets and community meetings have had Spanish translation in order to engage the entire community. These efforts have been successful in soliciting public input developing a remedy.

8. **Site Hydrogeology**: The hydrogeology is reasonably well understood from the many investigations that have taken place in the Ravenswood Industrial Area. This being the case, groundwater does not need further investigation.

9. **Threats to Human Health, Ecological Receptors, and Water Quality:** The concentrations of arsenic in shallow soil along the Spur exceed health based goals for human exposure in a residential setting of 20 mg/kg (see paragraph 14, Soil Cleanup Standard). As some of the homeowners have encroached onto the spur into their backyards, this residential use scenario and pathway of exposure is realized and must be addressed. Homeowners have also planted vegetables on the Spur. These vegetables have the potential to uptake arsenic from the impacted soil. In addition to human health risk posed by the impacted soil on the Spur, the northern portion of the Spur is adjacent to wetlands of San Francisco Bay. Stormwater runoff in this area of the Spur has the potential to carry arsenic impacted soil into the adjacent wetlands. The potential for this to occur is further increased due to portions of this area being within the flood zone. The potential for migration of impacted soil into the wetlands threatens water quality and ecological receptors in these wetlands and must be abated. Wetlands in the area are known habitat to the Salt Marsh Harvest Mouse and California Clapper Rail, both of which are endangered species, as well as other avian and terrestrial species.

10. **Regulatory Status**: Board staff, in April 1999, issued a request for technical report letter to UP, pursuant to Water Code Section 13267, requiring submittal and implementation of a workplan to further delineate the arsenic impacts. UP has cooperated with the Board and has moved forward to complete the task set forth in the Section 13267 letter.

11. **Adjacent Sites:** The Spur serviced the former Chipman Chemical (now Rhone-Poulenc) 1990 Bay Road facility which produced arsenic based pesticides and herbicides from 1926 to 1970. Arsenical raw materials were supplied to the facility via the rail spur. These materials were unloaded from hopper cars into an underground formulation tank

located beneath the spur on the 1990 Bay Road facility. As a result of these and other operations at the facility, significant quantities of arsenic have been released to the environment, impacting both soil and groundwater in the area. The 1990 Bay Road site is the subject of several Site Cleanup Requirement Orders adopted by the Board and significant investigations and cleanups have occurred. Cleanup activity at the 1990 Bay Road site have been completed, however, ongoing risk management is needed on a large portion of the site.

12. **Basin Plan**: The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required.

The Basin Plan for the area identifies the following potential beneficial uses of groundwater underlying and adjacent to the site include:

a. Municipal and Domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

The shallow groundwater in the vicinity of the spur has no potential beneficial use as a municipal and domestic supply based on total dissolved solids (TDS) criteria of State Board Resolution 88-63, "Sources of Drinking Water".

The existing and potential beneficial uses of nearby surface waters (San Francisco Bay and San Francisquito Creek) include:

a. Industrial service supply
b. Commercial and Sport Fishing
c. Water contact and non-contact recreation
d. Wildlife habitat
e. Cold freshwater and warm freshwater habitat
f. Fish migration and spawning
g. Navigation
h. Estuarine habitat
i. Shellfish harvesting
j. Preservation of rare and endangered species

The existing and potential beneficial uses of the wetland include:

a. Water non-contact recreation

b. Wildlife habitat
c. Estuarine habitat
d. Preservation of rare and endangered species

13. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. This order and its requirements are consistent with Resolution No. 68-16. State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

14. **Soil Cleanup Standard:** The land along the Spur is a portion of each of the residential lots which abut it. In addition, some homeowners have included the impacted Spur into their backyards. Considering these exposure scenarios, a residential cleanup standard is appropriate for the Spur. In order to expedite remediation and remain consistent with the soil cleanup standards adopted by the Board for the 1990 Bay Road Site, a residential health-based goal (HBG) of 20 mg/kg arsenic is an appropriate cleanup standard for the Spur. This HBG is based on an evaluation conducted in 1991 and documented in a technical memorandum titled "Derivation of Health-Based Goals for Arsenic in Soil", dated August 27, 1991 (prepared for U.S. EPA by its contractor PRC Environmental Management, Inc). In the 1991 technical memorandum, HBGs were calculated for several scenarios including commercial/industrial and residential uses.

    The HBGs, as set forth in the 1991 memorandum, for a residential scenario ranged from 20 mg/kg to 70 mg/kg depending on exposure pathways. It is appropriate to apply the more protective HBG of 20 mg/kg for arsenic impacted soil on the Spur. The 20 mg/kg HBG is based on residential exposure pathways that include ingestion of soil, inhalation of fugitive dust, and consumption of homegrown produce, and is based on potential cancer effects.

15. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance, pursuant to the California Water Code.

16. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of

waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

17. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

18. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through surface or subsurface transport to waters of the State is prohibited.

3. Activities associated with the surface or subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. REMEDIAL DESIGN AND CLEANUP STANDARDS

1. **Implement Remedial Design Report**: The discharger shall implement the Remedial Design report described in finding 6.

2. **Soil Cleanup Standards**: The following soil cleanup standards shall be met in all on-site soils.

Constituent	Standard (mg/kg)	Basis
Arsenic	20 mg/kg	USEPA HRA

C. TASKS

1. **CONFIRM FINAL GRADING AND DRAINAGE DESIGN**
   COMPLIANCE DATE: February 1, 2008.

   The discharger shall submit a report acceptable to the Executive Officer, containing the final grading and drainage design will be implemented on the spur.

2. **SCHEDULE FOR IMPLEMENTATION OF REMEDIAL MEASURES**
   COMPLIANCE DATE: February 1, 2008.

   The discharger shall submit a technical report acceptable to the Executive Officer containing a schedule for implementation of remedial measures described in the November 2004, Remedial Design report. Remedial measures must be completed, no later than December 1, 2008.

3. **COMPLETION REPORT**
   COMPLIANCE DATE: 120 days after completion of remedial actions.

   The discharger shall submit a report acceptable to the Executive Officer documenting completion of remedial measures.

4. **EVALUATION OF NEW HEALTH CRITERIA**
   COMPLIANCE DATE: 90 days after requested by Executive Officer

   Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising the cleanup standard in response to revision of health-based criteria.

5. **EVALUATION OF NEW TECHNICAL INFORMATION**
   COMPLIANCE DATE: 90 days after requested by Executive Officer

   Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup standard for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup standard.

6. **DELAYED COMPLIANCE**: If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

    a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

    b. Access to copy any records required to be kept under the requirements of this Order.

    c. Inspection of any monitoring or remediation facilities installed in response to this Order.

    d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

4. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

5. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

6. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of East Palo Alto
   b. San Mateo County, Health Services Agency
   c. USEPA

   The Executive Officer may modify this distribution list as needed.

7. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

8. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Board by calling (510) 622-2369 during regular office hours (Monday through Friday, 8:00 to 5:00).

   A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

   This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

9. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on _____.

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Bruce H. Wolfe
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY
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Attachments: Figure 1, Site Location Map